Mission First: Strategies for the Inclusion of Mission-Based Decision Making in Resiliency Planning

Concurrent Technologies Corporation

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Introductions

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A Grocery Store Example

Outside an H-E-B grocery in Texas. (Photo: Brendan Smialowski/AFP via Getty Images)

Agenda

- Introduction to Mission Assurance
- Policy and Governance
- Technical Approaches and Tools
- Integrated Energy & Water Planning
- Bringing It All Together

Mission Assurance (MA) – what is it really?

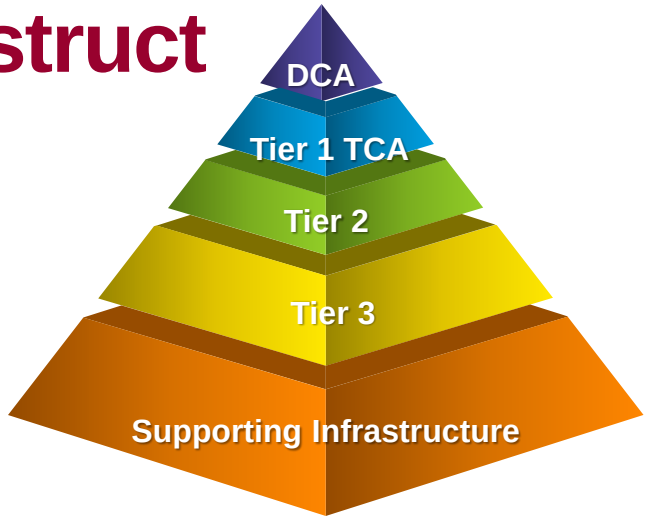
DoD mission examples

- Missile defense
- Counterterrorism
- Civil affairs
- Reconnaissance
- Nuclear deterrence
- Undersea warfare
- Amphibious warfare
- Cyber warfare
- WMD Counter-proliferation
- Homeland defense

Defense critical missions are "Global…designated by SECDEF as vital to national security…and critical to the execution of strategic priorities and plans"

- Does an installation have a mission?
- Does a facility have a mission?
- Does a facilities project really enhance mission assurance?
- Can missions succeed without resilient installations?

DoD Mission Assurance Construct



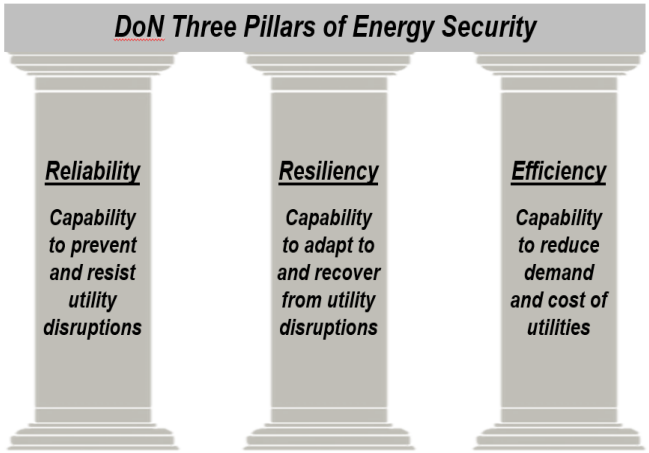
- **Defense Critical Asset (DCA) –** An asset of such extraordinary importance to operations in peace, crisis, or war that its incapacitation or destruction will have a very serious, debilitating effect on the ability of the DoD to fulfill its missions
- **Task Critical Asset (TCA) –** An asset of such extraordinary importance that its incapacitation or destruction will have a serious, debilitating effect on the ability of one or more DoD Components to execute the mission essential task it supports

Ref: DODD 3020.40

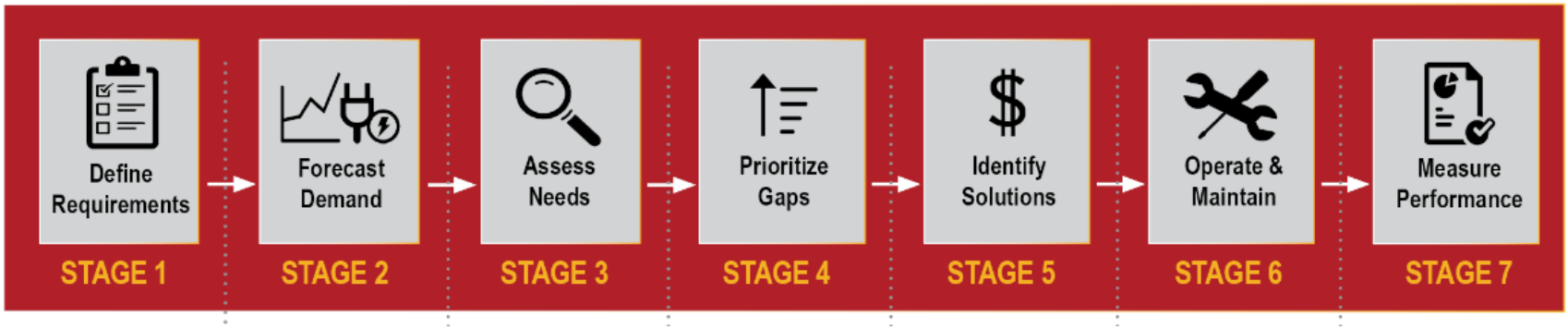
- **Supporting Infrastructure -** The critical path, interdependent components, and redundant capabilities that are used to directly support and assure the functioning or operation of a Critical Asset, such that the supporting infrastructure's loss, degradation, or denial will result in the failure to execute its associated task. -USMC MA Program

Incorporating MA Into Resiliency Planning

- Governance
  - Energy-Mission Integration Group (EMIG)
  - Energy Resilience Working Group
  - DoN partnerships with States (CA, HI)
- Policy
  - DoN Energy Security Framework
  - MCICOM Installation Energy Security Policy
    - Mission Assurance
    - Continuity of Operations (COOP) plans
    - Mutual Aid / Mutual Assistance Agreements
  - Third Party Financed Projects Guidance
  - Installation Energy Security Plan (IESP) Guidance



Energy Security Planning Framework

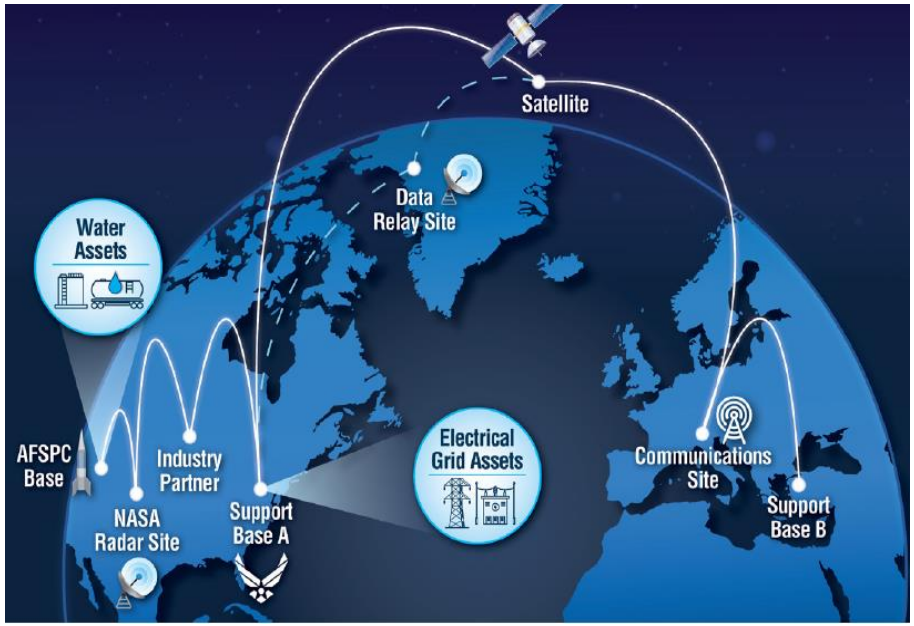


- Leverages existing programs and data sources
  - Installation Development (a.k.a. Master) Plans
  - Real Property record database
  - Maintenance history and Utility outage reports
  - Energy and Water Consumption data
  - Mission Assurance Assessments
- Assess each installation's ability to sustain critical operations during a 14-day disruption

Tools to Meet the Operational Environment

- Operational environment increasingly network-centric and dependent on systems like energy and water that enable the mission
- Expand analyses to account the System of Systems (SoS) network

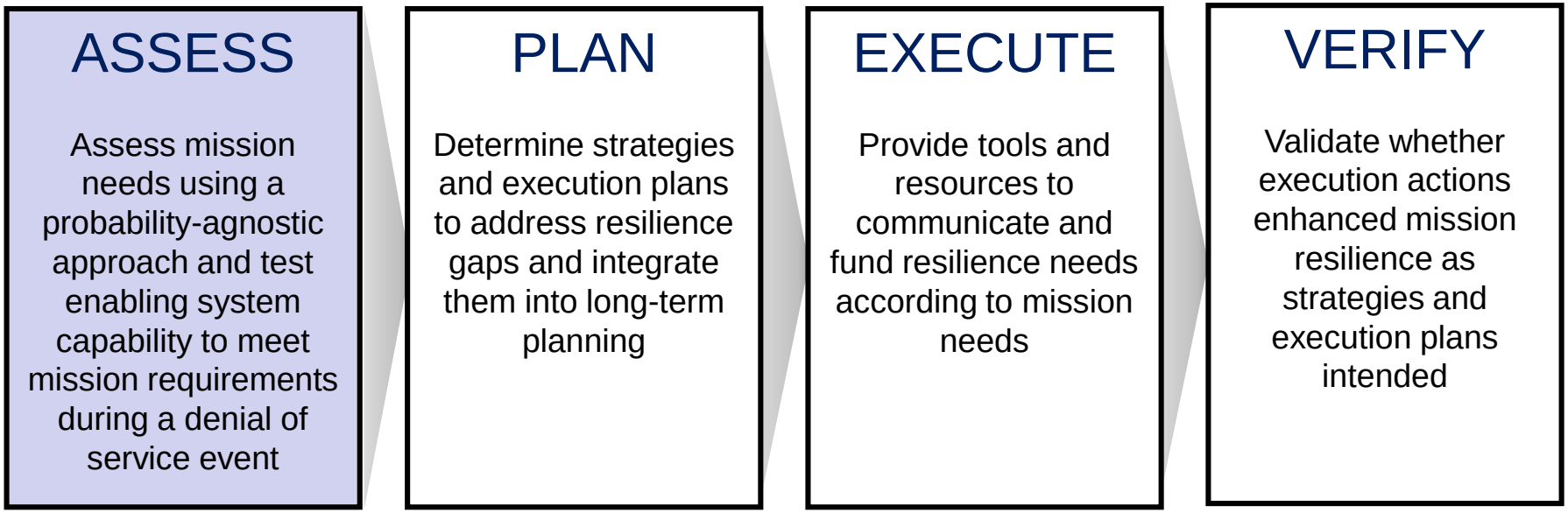
The System of Systems of a Mission



- Developing and refining tools that can be deployable to the local level

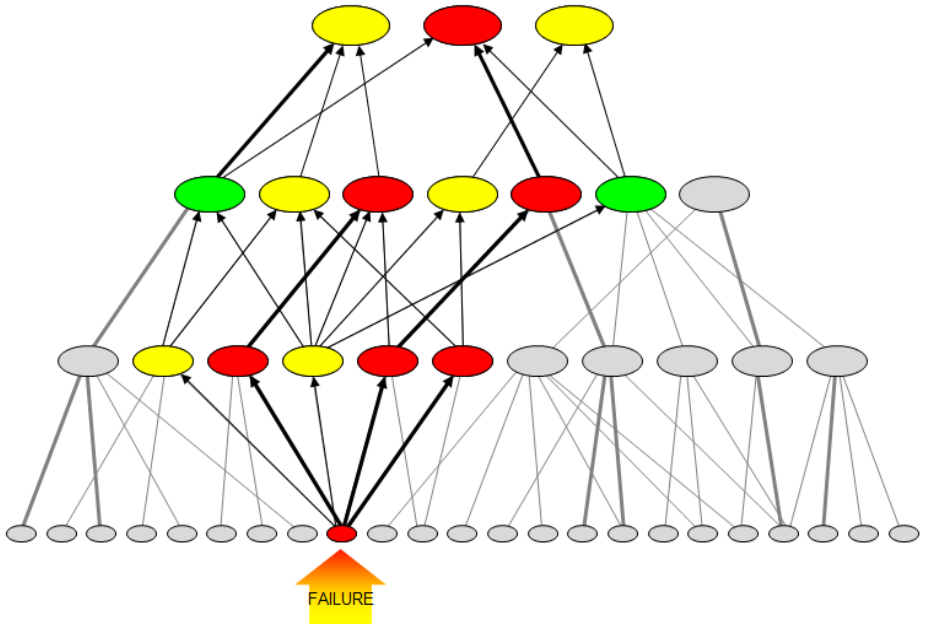
End-to-End Analyses

- Analyses should be a feedback loop that incorporates inputs and outputs at each stage
- Assessments first focus on mission owner requirements



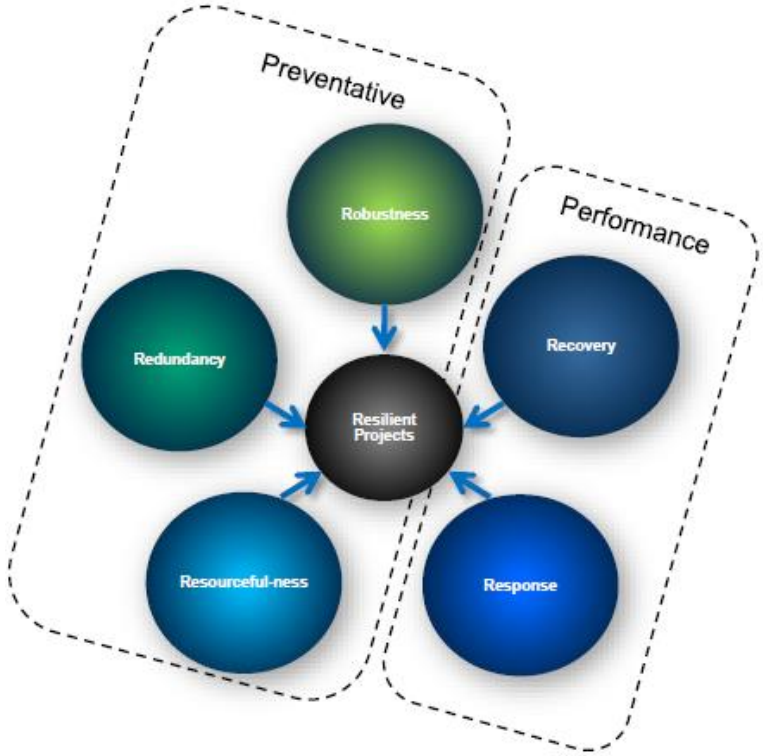
Crown Jewels Analysis

- Mission owner-centric analysis through decomposition and joint stakeholder workshops
- Examines how Denial of Service might impact key objectives
- Break down assumptions of dependencies, criticalities, workarounds, priorities
- Allows for more targeted analysis and planning



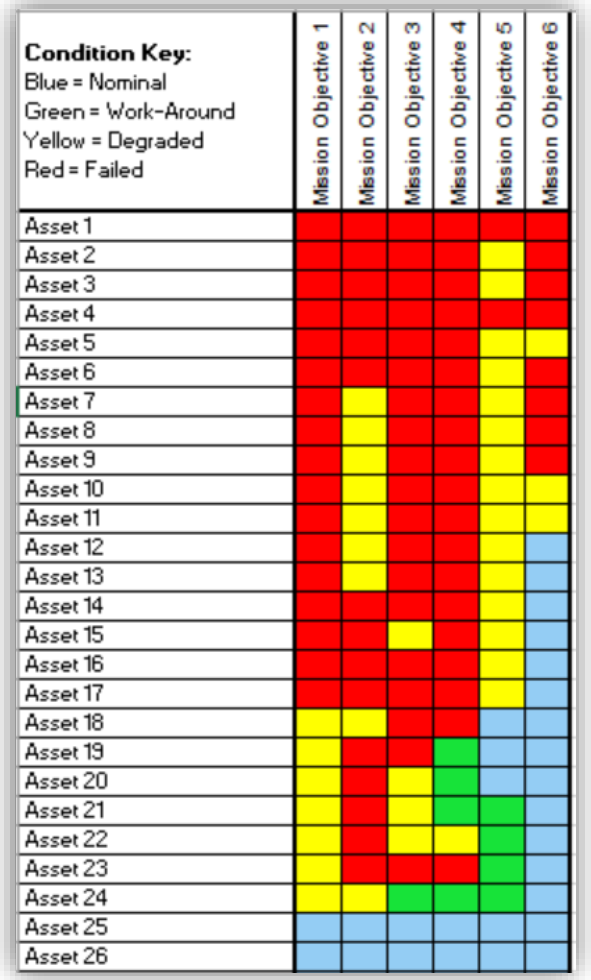
Grid Modeling and Resilience Analysis

- Analyze current posture of assets deemed key to mission operations
- Leverage data being gathered
  - One line diagrams
  - Load/usage data
  - Priorities
- Translate data into modeling capabilities and analysis
- Look at resilience as multi-faceted



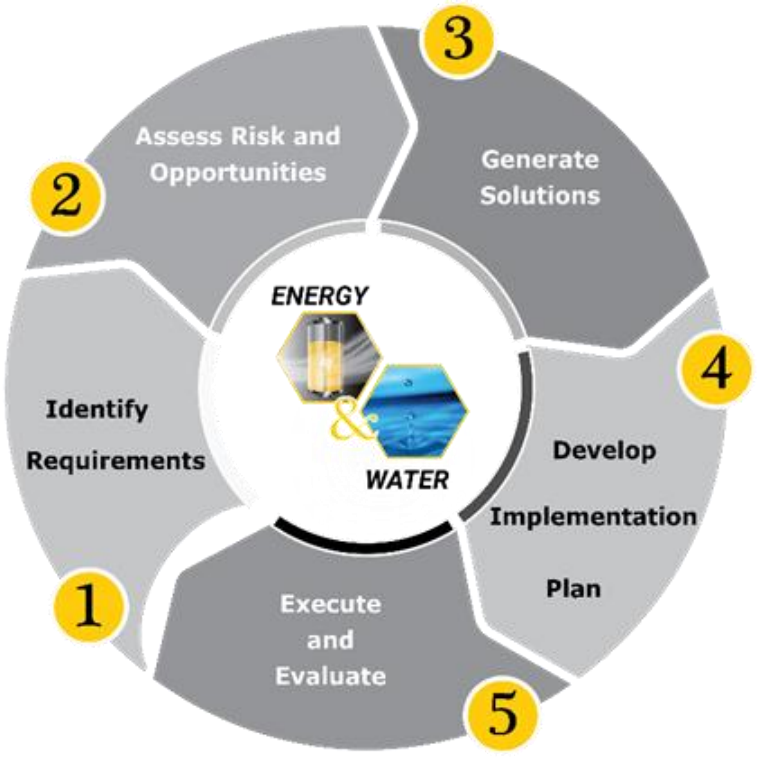
Challenges and Opportunities

- Turning data into information
- Establishing analysis parameters is essential but very challenging
- Executed locally but must have a global viewpoint
- Once everything becomes critical, nothing is critical
- Forces joint conversations that rarely occur in day-to-day operations



Integrated Energy and Water Planning

- Energy and Water Security Directive
- Installation Energy and Water Plan Guidance



		Risk Reduction Contribution (Based on Number of Critical Facilities Served)			Cost to Imple-ment	Oper. Effi-ciency	E&W Demand Redn.	Funding Sources	O&M Impact	Feasi-bility	Priority		
		Critical Mission Sustain-ment	Critical Mission Risk Reduction	Installation Risk Reduction							❶	❷	❸
erations and Plans													
1	Update and Maintain Generator List	No	83	No	LC/NC						❶		
2	Generator Refueling and Service Restoration Plans	42	83	Yes	$$						❶		
3	Tactical Power Systems, Personnel, and Support Equipment	42	83	Yes	$						❶		
4	Augment Mobile Power Capability	17	33	No	$						❶		
5	Utility Planning and Coordination	No	All	Yes	LC/NC						❶		
6	Cyber Security	No	Yes	Yes	$						❶		
7	Readiness Testing	No	Yes	Yes	$						❶		
8	Emergency Planning	No	Yes	Yes	$						❶		
9	Curtailment & Water Stations Plan	55	128	Yes	$						❶		
10	Generator Replacement with Dual-Fuel Units	15	27	No	$							❷	
mand Reduction													
1	Building Controls Optimization	89	No	No	$						❶		
2	Water Conservation	Yes	No	Yes	$						❶		
3	Energy Conservation	Yes	No	No	$-$$						❶		
4	Meter Critical Facilities	No	No	Yes	$-$$						❶		

Integrating Technical Inputs and Human Opinion…aka Planning

- New paradigm: Prioritize investment based on Risk Reduction
- Assess and Measure Risk with…
  - Unclear definition of “mission risk” associated with energy and water disruption
  - Constrained resources
  - Limited data
  - Conflicting opinions
  - Multiple possible operating conditions
  - Varying levels of technical expertise

Defining the Critical Requirements

"Must Haves"

- Critical Mission List
- How long to does the mission need to be operational?
- Energy and Water demand of these facilities
- Existing Backup
  - Including refueling and emergency response
- Condition of infrastructure supporting these facilities

Challenges

- Garrison perspective may not be the same as HQ; everyone thinks their mission is "critical"
- Individual mission owners don't know energy and water demands (no basis for this decision)
- No individual facility meter data
- Poorly maintained generator lists
- Privatized utilities and/or poorly maintained infrastructure maps

Conducting Risk Assessment

"Must Haves"

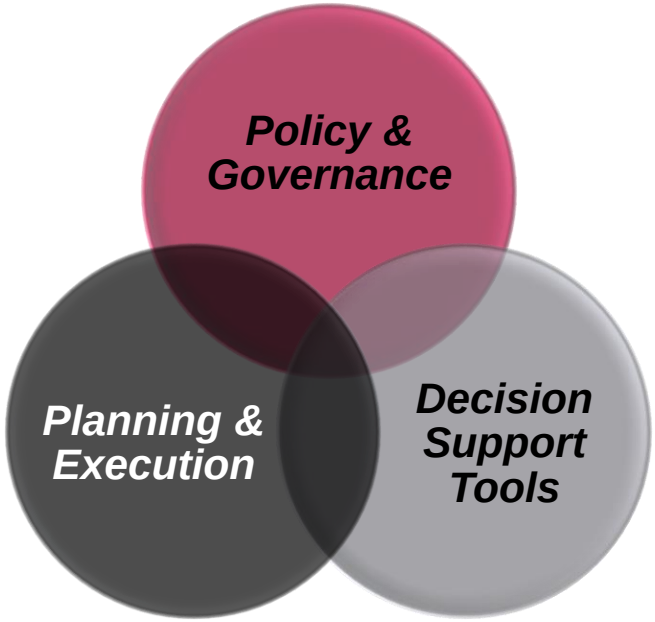
- Identify unacceptable risks and ensure this risk is reduced
- Document vulnerabilities and deficiencies
- Identify Courses of Action
- Prioritize Courses of Action

Challenges

- Classified data
- Approved Critical Facilities List
- Cooperation of Mission Owners
- Poorly maintained generator lists
- Privatized utilities
- Poorly maintained infrastructure maps
- Conflicting priorities
- Master Plan projects and priorities
- Utility planning

Bringing it Together

- You are only as resilient as your most vulnerable node
- Requires a comprehensive view of local and global priorities
- Develop multi-functional tools that can define requirements and measure performance



- Resilience requires forward looking planning but most current tools and metrics force us to look retrospectively
- Expanded stakeholder engagement is key to understanding future requirements

Changing Paradigms

- Traditional facilities planning processes are not centered around missions
- Current funding environment requires mission-focused decision-making
- How can CTC help?
  - Translate high level policy and guidance into practical applications
  - Detailed analysis of requirements
  - Evaluate alternative financing options
  - Facilitate stakeholder engagement
  - Compare cross-service / agency perspectives
  - Develop policy and procedures for implementation

Questions